

ROUTING AND TRANSMITTAL SLIP

15 November 1988

TO: (Name, office symbol, room number, building, Agency/Post)		Initials	Date
1. PROCUREMENT MANAGEMENT STAFF/OL			
2.			
3.			
4.			
5.			
Action	File	Note and Return	
Approval	For Clearance	Per Conversation	
As Requested	For Correction	Prepare Reply	
Circulate	For Your Information	See Me	
Comment	Investigate	Signature	
Coordination	Justify		

REMARKS

#1 FOR ACTION: PLEASE PROVIDE APPROPRIATE RESPONSE
WITH DROP COPY TO DDA AND DDCI.

SUSPENSE: 28 NOVEMBER 1988

cc: D/OS

u/17 EO B no OS action. B.
02 Registry for file
DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

Room No.—Bldg.

Phone No.

*5041-102

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

* GPO: 1983 O - 381-529 (232)

EXECUTIVE SECRETARIAT

ROUTING SLIP

TO:		ACTION	INFO	DATE	INITIAL
1	DCI				
2	DDCI		X		
3	EXDIR				
4	D/ICS				
5	DDI				
6	DDA	X			
7	DDO				
8	DDS&T				
9	Chm/NIC				
10	GC				
11	IG				
12	Compt				
13	D/OCA				
14	D/PAO				
15	D/PERS				
16	D/Ex Staff				
17					
18					
19					
20					
21					
22					

SUSPENSE

Date

Remarks To # 6: Direct response, with
info to DDCI, please.

ER 88-4214X

3637 (10-81)

Executive Secretary

9 Nov '88

Date

STAT



American Eagle Security Corporation

Executive Registry

88-4214X

1700 Wyatt Drive, Suite 1
Santa Clara, CA 95054
(408) 496-1256
FAX: (408) 496-0358

OS REGISTRY

1-1-TEC-CR

16 NOV 1988

12 DEC 1988

DDA/REG
LOGGED

DATE: 1 November 1988

ORGANIZATION: CIA

LOCATION: Box 1925

ATTENTION: Mr. Robert Gates. DDCI

SUBJECT: Integrated Electronic/Information Security

Dear Mr. Gates:

May I take this opportunity to gratefully "Thank You" for granting me a few moments of your valuable time.

Speaking with you for those few moments was and is truly an honor that I will never forget.

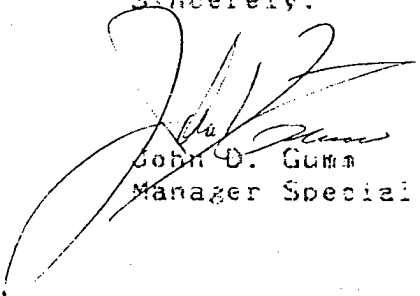
As was mentioned during those brief moments, American Eagle Security has previously submitted material, through the designated pipeline, for purusal.

If I may seem so bold; we have enclosed information on a product that is unique to the described situations.

This product, at present, is solely available through us. If after you and or your designated personnel pursue this feel that a formal presentation would be in order, we will be more than happy to arrange same.

Again, "Thank You" for the opportunity of speaking with you.

Sincerely,


John D. Gumm
Manager Special Projects

DDA - This is a request for a hearing. I am at a loss as to how to proceed. I will be in touch with you.

FIBER OPTIC SENSING AS APPLIED TO INTRUSION DETECTION SYSTEMS

Fiber optics as a viable technology is relatively new, being approximately thirteen years old.

Fiber optic sensing of physical effects has been pursued by a number of different groups over the past ten years. The appeal for this technology is drawn from the inherent properties of light guided in fiber. The light is completely immune to electromagnetic interference and can travel greater distances with negligible power loss. Technical advances in fiber manufacturing allows fiber to be configured to meet almost any form factor while maintaining strength, durability, and long life.

Fiber interferometric sensors developed for vibration, acoustic, thermal, rotational, and frequency detection have shown superior performance to conventional technologies in recent years. Efforts by a number of manufacturers to produce sensors for industry applications have been hampered for the following reasons:

- 1- High cost of fiber.
- 2- Short lifespan and high cost of fiber components, i.e. power splitters, interconnects, and semiconductor light sources.
- 3- The complexity of fiber configuration to produce superior performance.

The recent "boom" in the telecommunications industry utilizing fiber for information distribution has eliminated the first two areas of concern through refined designs and mass production. In most cases, the third item still exist due to requirements for specialized fiber components for high performance interferometric sensors. These specialized components are required to maintain a constant state of polarization of light traveling through the fiber components. Current polarization preserving components have marginal reliability and life expectancies and are significantly higher in cost (up to 50 times more expensive) than their telecommunications counterparts. As a result, most fiber interferometric sensors remain research laboratory experiments.

In January of 1988, a corporation utilizing a group of fiber optic engineers developed a fiber configuration for interferometric(acoustic, vibration and motion) sensors which could utilize standard telecommunications grade fiber and components with no requirements for optical polarization preservation. This technique has a patent pending through this corporation. This corporation is currently developing a number of products in the security and telecommunications industry utilizing this technique and has initiated production of one such product.

A by-product of this research and product development addresses the utilization of this technology as an **Intrusion Detection Sensor** for perimeter systems.

A fiber optic sensor system deployed for this purpose has many advantages over the current available technologies utilized in today's perimeter detection systems. These advantages include, but are not limited to the following:

- 1- **Remote deployment** - up to 30 km distance per zone.
- 2- **EMI** - sensitivity adjustable.
- 3- **Tamper proof** - generates a distance adjustable signal prior to physical contact with the fiber cable.
- 4- **Single-line sensor** - can be installed as an open cable or in conduit with the ability to interrogate point of intrusion within 1 cm.
- 5- **Commercially available** - all components except the transducer(sensing element) are off-the-shelf.
- 6- **Programmable** - sensitivity both during construction and after deployment is programmable, up to two orders of magnitude which may be used to fine tune the sensing with respect to false/nuisance alarms.
- 7- **Multiple sensing** - acoustic, thermal, vibration/seismic, frequency, etc.
- 8- **Environmental** - virtually unaffected by wind, rain, snow, hail, soil conditions, lightening, salt, water, vegetation, etc.
- 9- **Application** - single-line sensor(up to 30 km) or a mat configuration(300ft x 15/30ft).
- 10- **System interfaces** - RS 232, RS 485, 20 mil, etc.
- 11- **Cost effective** - considerable cost savings in product cost, installation cost, training cost, maintenance cost, spare parts cost, etc.,.
- 12- **Transportable** - when used in conjunction with a RF device, this system can be moved easily from site to site(land, air or sea).

Proceeding with these advantages in mind, the current development program involves the utilization of this technology to provide intrusion detection sensors on and around perimeters that maintain a NAR/FAR of zero and a probability of detection of 100. The development involved is only relevant to the criteria specified for the transducer verses development of an entire system. While the fiber optic cable itself provides specific sensing qualities to circumvent tampering of the cable, the transducer unit(s) actually identifies the parameters to which the sensor will respond; i.e. the sensitivity level for detection, the distance of that detection, the types of detection, and those parameters which are undesirable to detect.

There are two products currently available for perimeter intrusion detection. The first is a **single-line** sensor that utilizes a fiber optic cable and a transducer per zone which can be installed on a fence in conduit, PVC, or a special jacketed configuration. This single-line sensor can also be installed on/in the ground and inside or outside the protected area.

The second product is a **mat configuration** that is designed to premanufactured lengths and widths to facilitate ease of installation. The mat is constructed in a porous chicken wire type pattern with a special outer fabric over fiber optic cabling. For applications on a fence, the mat would be installed on the inside of the fence with conventional fasteners to secure the mat to the fence on a zone by zone basis. For applications on the ground either side of the fence, the mat can be constructed such that it could be rolled-off the back of a truck directly onto the ground. In this particular application, the mat is extremely conducive to high security applications where non-stationary and transportability are issues.

Beyond the perimeter usage, research and development continues for product use in areas where the **identification of emissions** is critical. Additional development addresses the use of this technology as a viable biometric device in the security industry. The furtherance of sensor technology research required to respond to the rapidly changing and growing demands of the security community coupled with improved manufacturing capabilities will produce a more cost effective and flexible product.

Declassified in Part - Sanitized Copy Approved for Release 2013/09/03 :
CIA-RDP91B00390R000500530003-4



**American Eagle Security
Corporation**

John D. Gumm

Manager

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OS REGISTRY

~~8-1812~~
16 NOV 1988**FIBER OPTIC SENSING AS APPLIED TO INTRUSION DETECTION SYSTEMS**

Fiber optics as a viable technology is relatively new, being approximately thirteen years old.

Fiber optic sensing of physical effects has been pursued by a number of different groups over the past ten years. The appeal for this technology is three-fold just as in Fiber Optic Telecommunications systems: The transmission of light through fiber is immune to electromagnetic interference; has better propagation characteristics and greater bandwidth than conventional wire systems; and the fiber can be manufactured to meet almost any form factor while maintaining strength, durability and long life.

Fiber interferometric sensors developed in recent years for vibration, acoustic, thermal, rotational, and frequency detection have shown superior performance to conventional sensors but production efforts by manufacturers have been prohibitive for the following reasons:

- 1- High cost of fiber.
- 2- Short lifespan and high cost of fiber components, i.e. power splitters, interconnects, and semiconductor light sources.
- 3- The complexity of fiber configuration to produce superior performance.

The recent "boom" in the telecommunications industry to utilize fiber for information distribution has virtually eliminated the first two areas of concern, through refined designs and mass production. The third item, however, still exist in most cases due to the need for specialized fiber components for high performance interferometric sensors. These specialized components are required in order to maintain a constant state of polarization of light traveling through the fiber components. Existing polarization-preserving components have marginal reliability and life expectancies and are significantly higher in cost (up to 50X) than their telecommunications counterparts. As a result, most fiber interferometric sensors remain research laboratory experiments.

In January of 1988, a corporation utilizing a group of fiber optic engineers developed a fiber configuration for interferometric(acoustic, vibration and motion) sensors which utilize standard grade fiber and components with no requirement for preserving polarization. This corporation has applied for and has a patent pending for this technology breakthrough and is utilizing this technique in developing a number of products for the security and telecommunications industry.

STAT

*IF INTERESTED
GIVE ME A YELL.*

STAT

One such product currently in production utilizes this technology as an **Intrusion Detection Sensor** for perimeter systems.

A fiber optic sensor system deployed for this purpose has many advantages over available technologies utilized in today's perimeter detection systems. These advantages include, but are not limited to the following:

- 1- **Remote deployment** - up to 30 km distance per zone.
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Beyond the perimeter usage, research and development continues for product use in areas where the **identification of emissions** is critical. Additional development addresses the use of this technology as a viable **biometric device** in the security industry. The furtherance of sensor technology research required to respond to the rapidly changing and growing demands of the security community coupled with improved manufacturing capabilities will produce a more cost effective and flexible product.



**American Eagle Security
Corporation**

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Santa Clara, CA 95054
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August 16, 1988

Subject: Integrated Electronic/Information Security

American Eagle Security Corporation (AESC) was founded in 1987 as a wholly-owned subsidiary of **American Magnetics Corporation (AMC)**, a Fortune 1200 Company. High quality staffing, coupled with unique management concepts tailored to the requirements of the individual customer, characterizes **AESC's** growth as a small business.

AESC specializes in applying state-of-the-art computer and security systems technology to highly complex technical problems within the security industry, and markets, designs, installs and integrates security control systems, such as access control, closed circuit television, guard control, fire, perimeter, intrusion detection, and biometric systems with a number of operating systems.

In general, the activities of **AESC** fall into six broad categories:

- o Systems Engineering and Integration
- o Site Support, Testing and Training
- o Project Management Services
- o Government Security Systems
- o Special Programs
- o Operational Security (OPSEC) Services

In order to assure success in each and every task, **AESC** has assembled a highly qualified, technically proven team to meet the requirements of any given project. The team is organized with **AESC** responsible for overall program management and technical direction as well as design, procurement, integration, and testing. Principal subcontractors, as required by the project statement of work, are responsible for installation, testing and as needed for training, operations, and maintenance support.

The strengths of this team organization are:

- o **Financial.** The **AESC** team is financially secure with the resources to implement large, complex computerized security systems.

- o **Project Management.** AESC has the ability to complete projects on time, within budget, and meet the customer's requirements by utilizing in-house resources.
- o **Technical Competence.** AESC has the ability to design and integrate complex computer based security systems using state-of-the-art hardware and software adapted to the customer's needs.
- o **Objectivity.** AESC is not driven by marketing in-house hardware or software for security system applications and therefore can select from a variety of commercially available components that best suit the customer's needs.
- o **Responsiveness to Customer Needs.** AESC methodology assures that customer requirements are the focal point of every project.

The design, installation, and integration of large computer based security systems, test and evaluation programs, and technical and OPSEC services has generated a corporate capability unique in its diversity, scope and depth.

AESC's Engineering and Integration staff members have worked with a wide variety of Government, industrial and commercial security systems, have applied many different research and system engineering methodologies to complex problems and have experience with most access control, intrusion detection and closed circuit TV equipment and systems currently available.

AESC's OPSEC Services staff members have provided counterintelligence, counterespionage, hostile threat, physical security and operations security services to U.S. military and civilian organizations on four continents. Their expertise allows AESC to offer OPSEC Services in the following areas:

- o Information Security (INFOSEC)
- o Communications Security (COMSEC)
- o Electronic Security (ELSEC)
- o TEMPEST Control Measures and Countermeasures
- o Physical Security
- o Computer Security
- o Security Planning
- o Vulnerability Assessment and Threat Analysis
- o Countermeasures
- o Training

We believe that our approach, capabilities, and experience will show:

- o AESC fully comprehends the customer's requirements, including explicit specifications statements and implicit security and operational requirements.

- o AESC offers the best approach to maximizing technical compliance while minimizing performance risk. Our extensive corporate and individual staff experience will allow you to have complete confidence in AESC as a proven integrated systems contractor.
- o Products proposed by AESC are the most technically advanced and readily available in the industry. Using high-speed multi-processing 32-bit computers, industry standard bus structures, distributed intelligence and modular hardware components, our systems excel in performance, reliability, availability and maintainability. Our software systems contain the most sophisticated functions available, yet are easily operated by even an unskilled user.

AESC looks forward to meeting with you and expanding on our current services and abilities. Please contact the undersigned at (702) 254-0558, or Mr. Jim Staley at (408) 496-1256.

Sincerely,

AMERICAN EAGLE SECURITY CORPORATION



John Gumm
Manager, Special Projects

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